

### **REMARKS**

In the Office Action, claims 1, 2, 4-8, 10-17 and 19-21 were rejected. All of the pending claims are believed to be allowable over the prior art references cited by the Examiner. Reconsideration and allowance of all pending claims are respectfully requested in view of the arguments summarized below.

#### **Rejections Under 35 U.S.C. § 103**

In the Office Action, claims 1-2, 4-8, and 10-17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Carlson et al., U.S. Patent No. 5,978,447 (hereinafter “Carlson ‘447’”) in view of Chidester, U.S. Patent No. 6,819,741 (hereinafter “Chidester”) and Carlson et al., U.S. Patent No. 4,577,340 (hereinafter “Carlson ‘340’”). Claims 14-17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Carlson ‘340 in view of Carlson ‘447. Claims 19-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McCarthy, JR., U.S. Patent Application No. 2004/0109538 (hereinafter “McCarthy”). The Applicants respectfully traverse these rejections.

#### **Claims 1, 7 and 14 and the Claims Depending Therefrom.**

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985).

Contrary to the cited caselaw, the Examiner fails to apply combinations of references that include *all* of the recited features of claims 1, 7, and 14. Therefore, Applicants respectfully assert that the present invention, as recited in independent claims 1, 7 and 14 is patentable over Carlson '447, Chidester and Carlson '340, alone or in combination.

In particular, the examiner acknowledges that Carlson '447 fails to disclose, suggest or teach an insulator isolating the cathode from ground potential. Additionally, the examiner acknowledges that Carlson '447 fails to disclose, suggest or teach two duplex bearing assemblies straddling the target. The Examiner cites Chidester and Carlson '340 to obviate these deficiencies in the teaching of Carlson '447 respectively. However, *Chidester and Carlson '340 fail to disclose, suggest or teach the insulator and the motor rotor system being located on the same side of the target as recited in claims 1 and 7 of the present application.* Further, *Carlson '447 and Carlson '340 fails to disclose, suggest or teach at least two duplex bearing assemblies straddling the target as recited in claim 14 of the present application.* In fact, the Carlson '340 reference appears to disclose two duplex bearing assemblies (78) that are on the same side of the target (43). See Carlson '340, Fig. 1.

Not only are the cited combinations of references deficient for failing to disclose all recited elements of the relevant claims, in addition, the Examiner fails to supply sufficient reason as to why one skilled in the art would combine the cited references to construct the X-ray tube as recited in the present claims. In particular, the Examiner states that it would be obvious to one skilled in the art to adapt the bearings of Carlson '447 with duplex bearings as taught by Carlson '340, since duplex bearing would improve durability. However, the passage referenced by the Examiner merely notes the usage of "[a] pair of high durability bearings 78." Carlson '340, col. 4, lines 58-61. There is no indication within the Carlson '340 reference that the "durability" of the bearings 78 is attributable to the dual nature of the bearings, the composition of the

bearings, or other factors. Indeed, the passage relied upon by the Examiner suggests that it is the use of *lubricants* with the bearings that assures long life. *See* Carlson '340, col. 4, lines 60-61 (stating "[bearings 78] are provided with conventional lubricants, assuring long life"). Therefore, *there is no basis* for combining the Carlson '447 and Carlson '340 references for the motivation of improving durability, as relied upon by the Examiner. Further, there is no suggestion in Carlson '340 that a duplex bearing would be needed or should be provided to withstand the high structural load at higher rotational speed of gantry (*See*, Column 4, lines 58-61, cited by the Examiner).

When prior art references require a selected combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Applicant respectfully submits that neither Carlson reference suggests the combination relied upon by the Examiner or a motivation for such a combination. Accordingly, the applicants believe that the combination is not obvious to one skilled in the art and the Examiner is impermissibly using hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In view of the forgoing deficiencies in the teachings of the cited art, the Examiner has failed to establish a *prima facie* case of obviousness of claims 1, 7 and 14. These claims, and the claims depending therefrom are therefore believed to be clearly patentable over the cited combination. Thus, it is respectfully requested that the rejections of claims 1, 2, 4-8, and 10-17 under 35 U.S.C. §103(a) be withdrawn.

**Claims 19 and 21 and the Claims Depending Therefrom.**

Applicants respectfully assert that the present invention, as recited in independent claims 19 and 21 is patentable over McCarthy. McCarthy fails to teach, suggest or disclose rotational speed greater than three rotations per second. The rate of gantry rotation disclosed by McCarthy is in the range of 2-3 revolutions per second (*See*, Paragraph 27, lines 4-8). The examiner acknowledges that McCarthy fails to teach a method of rotating the gantry at greater than three rotations per second or at approximately five rotations per second. However, the Examiner argued that it would have been obvious to one skilled in the art at the time of the invention to rotate the gantry of McCarthy at greater than three rotations per second or at approximately five rotations per second, since the faster rotational speed of the gantry would reduce scanning time.

Applicants respectfully assert that McCarthy would be motivated to rotate its gantry at greater than three rotations per second only if the gantry is capable of being rotated at the claimed speed, i.e., there can be no motivation to rotate the gantry faster than it is capable of being rotated. Applicants note that the McCarthy reference does not appear to disclose a gantry capable of rotating at greater than three rotations per second. Indeed, the detailed description of the McCarthy reference only discloses a gantry rotational velocity of 2-3 revolutions per second, as noted above. *See* McCarthy, paragraph 27, lines 4-8. As McCarthy has disclosed an exemplary *range* of revolutions per second, it is reasonable to assume that disclosed range is *complete* and constitutes the intended limit at which the McCarthy gantry is capable of rotating, else a broader range (such as 2-4 or 2-5 revolutions per second) would have been disclosed. That is, there is no reason for the McCarthy reference to disclose an *incomplete range* of intended or operational velocities. The fact that it would be convenient for the Examiner in view of the claims of the present application to rotate the gantry disclosed in the McCarthy reference at greater than the disclosed rotational velocity amounts to nothing more than impermissible hindsight analysis on the part of the Examiner, examining the cited reference in view of the presently recited subject matter, not in view of the teachings of

the reference. Indeed, there is no indication that the gantry disclosed by the McCarthy reference is physically capable of rotating at velocities higher than those disclosed (see, for example, paragraphs 5-7 of the present application, discussing physical constraints on gantry rotational velocity), nor does the Examiner provide any indication as to why such high speed operation is believed possible of the McCarthy gantry.

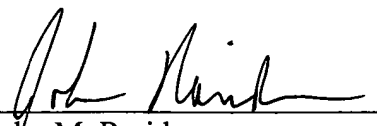
Therefore, absent some indication that such rotational velocity is both possible and desirable in the context of the McCarthy reference, no *prima facie* case of obviousness is believed to exist with regard to claims 19 and 21. These claims, and the claims depending therefrom are therefore believed to be clearly patentable over the cited reference. Thus, It is respectfully requested that the rejection of claims 19-21 under 35 U.S.C. §103(a) be withdrawn.

### **Conclusion**

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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